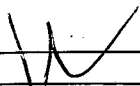


Date: Thursday, 13/12/2007 2:53:40 PM
 User: Linda Lacelle

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : BLADE
Job Number : 36343	
Estimate Number : 10327	
P.O. Number :	Part Number : D2741
This Issue : 13/12/2007 S.O. No. :	Drawing Number : D2741 REV C
Prsht Rev. : NC	Project Number : N/A
First Issue : / / Type : MACHINED PARTS	Drawing Revision : C
Previous Run : 35435	Material :
Written By : 	Due Date : 30/01/2008 Qty: 40 Um: Each
Checked & Approved By :	
Comment : Est Rev: D 00.11.15 Removed P/O turning - in house process EC	
Est Rev: E 06-03-20 As Per Rev C JLM	
Est Rev: F 06.04.20 Added grinding after heat treating EC	

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

1.0	M4130NB0500X03000	4130 Bar 0.5 x 3.0"
-----	-------------------	---------------------



Comment: Qty.: 1.2118 f(s)/Unit Total: 48.4722 f(s)

4130 BAR 0.5 x 3.0"

Material: 4130 steel bar 0.50" x 3.00"

Batch: B106274

BF 08.02.07

2.0	BAND SAW	BAND SAW
-----	----------	----------



Comment: BAND SAW

Cut blanks 13.850" long +0.063" -0.000"

BF 08.02.07

40

3.0	HAAS1	HAAS CNC VERTICAL MACHINING #1
-----	-------	--------------------------------



Comment: HAAS CNC VERTICAL MACHINING #1

1-Machine per folio FA108

BF /

08.02.08

40

PTC

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D2741 PAR #: N/A Fault Category: Prod/Machined Part NCR: Yes No DQA: 12 Date: 08/03/18
 QA: N/C Closed: 12 Date: 08/03/19

NCR: <u>36343</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
<u>08-02-11</u>	<u>3</u>	<u>Undercut on top surface wrong origin R.C. HAMMAN error</u>	<u>[Signature]</u> <u>08/02/11</u>	<u>Adjust origin (machine)</u> <u>SEAP &</u> <u>replace</u>	<u>SD</u> <u>08/02/11</u>	<u>[Signature]</u> <u>08/02/11</u>	<u>[Signature]</u> <u>08/02/11</u>	<u>[Signature]</u> <u>08/02/11</u>

NOTE: Date & initial all entries

Date: Thursday, 13/12/2007 2:53:40 PM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BLADE

Job Number: 36343

Part Number: D2741

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

4.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE
-----	-----	--



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

SG1

08-02-08

(40)

5.0	QC8	SECOND CHECK
-----	-----	--------------



Comment: SECOND CHECK

SA

08/02/11

(40)

6.0	SMALL FAB 1	SMALL & MEDIUM FAB RESOURCE 1
-----	-------------	-------------------------------



Comment: SMALL & MEDIUM FAB RESOURCE 1

1-Deburr

2-Bend per Dwg D2741

SAD 08/02/14 140

CP 08/02/14 (40)

SB 08/02/14

(40)

7.0	QC5	INSPECT WORK TO CURRENT STEP
-----	-----	------------------------------



Comment: INSPECT WORK TO CURRENT STEP

08/02/14 (40)

8.0	OUTSIDE SERV.30	OUTSIDE SERVICES-MACH
-----	-----------------	-----------------------



Comment: Sub-Contracting PURCHASING

Issue P/O: 4715

Harden material as per Dwg D2741

Min. Ultimate Tensile Strength = 152 ksi (30-40 HRC)

Min. Yield Tensile Strength = 141 ksi

Test report or Certification required

C208/02/14

(40)

9.0	PACKAGING 1	PACKAGING RESOURCE #1
-----	-------------	-----------------------



Comment: PACKAGING RESOURCE #1

Receive and inspect for transit damage

Ensure Test report or Certification attached

8/3/6 (40)

10.0	QC5	INSPECT WORK TO CURRENT STEP
------	-----	------------------------------



Comment: INSPECT WORK TO CURRENT STEP

08/03/07 (46)

11.0	SMALL FAB 1	SMALL & MEDIUM FAB RESOURCE 1
------	-------------	-------------------------------



Comment: SMALL & MEDIUM FAB RESOURCE 1

1-Pass in deburring machine

2-Grind off edges

B 8-3-17

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 13/12/2007 2:53:40 PM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BLADE

Job Number: 36343

Part Number: D2741

Job Number:



Seq. #:

Machine Or Operation:

Description :

12.0

POWDER COATING

POWDER COATING



m 107005



(40)

Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.2) as per QSI 005 4.3

BL 08-03-17

13.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



(40X)

Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

M-1 08/03/18

14.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock
Location: *464*

8/3/18

50

(40X)

AS - 8/03/18

15.0

QC21

FINAL INSPECTION/W/O RELEASE



(40)

Comment: FINAL INSPECTION/W/O RELEASE

17-08/03/18

Job Completion



m 2008/3/18

(40)

ee

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

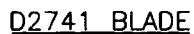
QA: N/C Closed: _____ Date: _____


NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

RELEASED
JUL 22 07

DESIGN	DART AEROSPACE USA, INC.		REV. C
DRAWN BY	PORT HADLOCK, WA		
CHECKED	DRAWING NO.	SHEET 1 OF 1	
DATE	TITLE	SCALE	
06.07.12	BLADE	1:3	
A	98.04.16	NEW ISSUE	
B	98.09.01	CHANGE C'SINK TO C'BORE	
C	06.01.12	LARGER HOLE, ADD RADIUS AND CHAMFER ADD +041/-043 OPTIONS	



- 1) MATERIAL: AISI 4130 STEEL 0.375 THICK
MIN. ULTIMATE TENSILE STRENGTH = 152 ksi (34-40 HRC)
MIN. YIELD TENSILE STRENGTH = 141 ksi
- 2) FINISH: POWDER COAT WHITE (REF. 4.3.5.2) PER DART QSI 005 4.3
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) BREAK ALL SHARP EDGES 0.030 TO 0.060
- 6) TO MAKE D2741-041, WELD D2941-300 (4) AS SHOWN ABOVE. 
- 7) TO MAKE D2741-043, WELD 7560 HARDCOAT ROD INSTEAD OF D2941-300

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VAC AERO

INTERNATIONAL INC.

RELEASE NOTE

GST No.: R105468102

OAK 95817-1



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1371 SPEERS ROAD, OAKVILLE, ONTARIO
CANADA L6L 2X5
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2009 WYECROFT ROAD, UNIT B
OAKVILLE, ONTARIO
CANADA L6L 6J4
TEL: (905) 827-7377 FAX: (905) 827-1380



QUEBEC DIVISION
7450 RUE VÉRITÉ STREET, ST. LAURENT, QUÉBEC
CANADA H4S 1C5
TEL: (514) 334-4240 FAX: (514) 334-6269

03/04/2008

MM / DD / YYYY

PAGE: 1

BILL TO: 1DAR01
DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY, ON

SHIP TO: MANCO COMPLEX Dart Aerospace Ltd.
4660 HICKMORE 1270 Aberdeen St.
ST. LAURENT QC Hawkesbury, ON

K6A 1K7

H4T 1K2

K6A 1K7



DATE SHIPPED	SHIP VIA	F.O.B.
03/04/2008		ORIGIN
CUSTOMER P/O No.	JOB No.	TERMS
5715		COD

PART No.	DESCRIPTION	UOM	QTY ORD	QTY SHPD	TEST RESULTS
D2741	B 36343 BLADE	EA	40	40	
	Process Specifications: Procedure: 4161 HARDENED PER DWG. D2741 TO 152 KSI MINIMUM 100% HARDNESS TESTED PER ASTM E-18, HRC: 34-40 MATERIAL: 4130				
	SHIP BACK TO DART AEROSPACE				
D2968-041	TOW RING	EA	40	40	
	Process Specifications: Procedure: 4047 HEAT TREATED TO 125 KSI MIN. 100% HARDNESS TESTED PER ASSTM E-18, HRC 27-32.5 MATERIAL: 4130				
	SHIP TO MANCO COMPLEX				

100% HARDNESS TESTED

40 pcs.

37/38 HRC

AR.



100% HARDNESS TESTED

40 pcs.

29/30 HRC

AR.



I hereby certify that the material covered by this release note has been inspected and tested and conforms to all specifications relevant thereto in accordance with the conditions of the contract / or purchase order.

ON BEHALF OF VAC AERO INTERNATIONAL INC.

Diana Robinson
Authorized Q.C. Inspector



VACUUM BRAZING · HEAT TREATING · SPECIAL PROCESSING · FURNACE EQUIPMENT
TURBINE COMPONENT OVERHAUL · PLASMA AND OTHER COATINGS



HEAT
TREATING